

Lowell Regional Water Utility

815 Pawtucket Blvd., Lowell, MA 01854

2005 Annual Water - Quality Report

Volume 8

PWS ID # MA 3160000

~ OUR PRIDE FLOWS ~

Dear Consumer: The Lowell Regional Water Utility (LRWU) is proud of the fine drinking water it provides to the residents of Lowell and to several of our neighboring communities. We are pleased to present a summary of the quality of the water provided to you during the calendar year 2005. The USEPA 1996 Safe Drinking Water Act (SDWA) requires that all utilities across the country issue an annual "Consumer Confidence Report" to their customers in addition to other notices that may be required by law. This report details where our water comes from, what it contains, and the possible risks to the health of certain segments of the population. Our constant water testing and the conventional treatment plant are designed to insure that we are providing you with the safest and most reliable water supply. We encourage public interest and participation in our community's decisions affecting drinking water. Informed consumers are our best allies in maintaining safe drinking water. All requests for information or any questions regarding this, "Water Quality Report", should be directed to Diane Henderson, Lab Director, at 978-970-4166, or Fax at 978-970-4235.

From the desk of Daniel J. Lahiff, Executive Director:

The two-year treatment plant upgrade project has been completed. During all this time, the treatment plant has gone through a complete renovation. New disinfection chemicals and the new automated filters have already improved our test results, which are now better than ever and well below the MA Department of Environmental Protection (DEP) and US Environmental Protection Agency (EPA) requirements. With the completion of the upgrades, our water utility is now a showplace for all to be proud of. The LRWU is continuing its focus on improving water service to the consumer population it serves. A new project is currently under way which will further improve the water quality and pressure delivered to consumers by enhancing the City's water distribution system. This project will insure that the high quality water produced at the treatment plant is reliably delivered to consumers for many years to come.

Overview:

In 2005, the LRWU supplied more than 4.5 billion gallons (4,529,278,000) of drinking water to over 135,000 people in the communities of Lowell, Dracut, Tyngsboro, and Chelmsford. In 2003 the LRWU was granted another loan from the State Revolving Fund (SRF). This \$14.5 million loan was granted to construct upgrades to the LRWU's pumping and distribution system facilities. The project is currently under way and includes the replacement or rehabilitation of aging water mains across the city, replacement of the water storage tank on Wedge St. in the Highlands, creation of a new pressure zone, replacement of the raw and treated water pumps, construction of a new pump station in Centralville, and security related improvements to the water system. Construction of the new storage tank, replacement pumps, and water mains in some areas is nearing completion. The remainder of the work will begin in the spring and summer, and continue through 2006. **Lead and Copper Reduction:** The annual monitoring rounds of lead and copper "tap sampling" were performed for the years 2000, 2001, 2002, and 2003. In all six compliance testing rounds, the 90th percentile action level for lead (0.015 mg/l) and copper (1.3 mg/l) were not exceeded. On June 24, 2003, The Department of Environmental Protection (DEP) therefore approved a reduction in lead and copper monitoring frequency (50 samples) to once every three years. The next round of lead and copper monitoring will be collected during 2006.

An Explanation of the Water-Quality Data Table:

Unless otherwise noted, this report is based upon tests conducted in the year 2005 by the Lowell Regional Water Utility's certified Laboratory Director, and Treatment Plant Operators, and by certified water-testing laboratories. Terms used in the Water-Quality Table and in other parts of this report are defined here.

Maximum Contaminant Level - (MCL): The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

Maximum Contaminant Level Goal - (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

Maximum Residual Disinfectant Level - (MRDL): The highest level of a disinfectant (chlorine) allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal - (MRDLG): The level of a drinking water disinfectant (chlorine) below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Action Level - (AL): The concentration of a contaminant that, if exceeded, triggers a treatment or other requirement, which a water system must follow.

Treatment Technique - (TT): A required process intended to reduce the level of a contaminant in drinking water.

2005 Water Quality Data Table

Contaminant Detected	Unit	MCL	MCLG	Level Detected	Range of Detection	Major Sources	Violation
<u>Regulated Contaminants</u>							
Nitrate	ppm	10	10	0.70	N/A	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion from natural deposits.	NO
Fluoride * (see below)				1.28	0 to 1.28	Erosion of natural deposits, water additive that promotes strong teeth.	NO
* State (MCL)	ppm	2	none				
* EPA (MCL)	ppm	4	none			Discharge from fertilizer and aluminum factories.	
Sodium	ppm	none	none	32.0	N/A	Erosion of natural deposits; road salt, and water treatment chemicals.	NO
Chlorite	ppm	1.0	0.8	0.57	0.17 to 0.57	By-product of drinking water disinfection.	NO
Turbidity (see note)	NTU	1.0	TT= 97%	1.33	0.04 to 1.33	Soil runoff.	NO
TT= lowest percentage of monthly samples <0.3 NTU							
Note: <u>Turbidity</u> is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.							
Disinfectant residual	ppm (MRDL)	4	(MRDLG) 4	1.20	0.31 to 1.12	By-product of drinking water disinfection.	NO
<u>Volatile Organic Contaminants</u>							
(TTHM)	ppb	80	0	(33.0)	6.2 to 58.9	By-product of drinking water chlorination.	NO
[Total Trihalomethanes](Highest Running Annual Average)							
<u>Disinfection By-Product Contaminants</u>							
(HAA)	ppb	60	0	(9.94)	0 to 26.1	By-product of drinking water chlorination.	NO
[Halo-acetic Acids] (Highest Running Annual Average)							
<u>Unregulated Contaminants</u>							
MTBE	ppb	none	none	1.3	N/D<0.05 to 1.3	Gasoline Additive.	NO
Chloroform	ppb	none	none	1.9	1.9 to 27	By-product of drinking water chlorination.	NO
Bromodichloromethane	ppb	none	none	1.1	1.1 to 7.4	By-product of drinking water chlorination.	NO
Chlorodibromomethane	ppb	none	none	1.1	N/D<0.05 to 1.1	By-product of drinking water chlorination	NO
Sulfate	ppm	none	none	8.2	N/A	Mineral and nutrient	NO
Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.							
<u>Radionuclides</u>							
Gross Alpha	pCi/l	15	0	0.5 (+-1.1)	N/A	Erosion of natural deposits	NO
Radium 228	pCi/l	5	0	0.1 (+-0.6)	N/A	Erosion of natural deposits	NO
.							
Contaminant	Unit	AL	MCLG	90 th % Value	# of Samples Above AL	Major Sources	Violation
Lead	ppb	15	0	10.30	1 of 50	Corrosion of household plumbing Systems. Erosion of natural deposits;	NO
Copper	ppm	1.3	1.3	0.06	0 of 50	Corrosion of household plumbing Systems. Erosion of natural deposits; Leaching from wood preservatives	NO

Finished water pH ranged from 7.4 to 8.4

Water Source:

The only water supply for Lowell's Water Treatment Plant is the surface water from the Merrimack River, which has its source in the White Mountains of New Hampshire. The Intake Station is situated on the riverbank north of the city and water is pumped one half mile to the treatment plant. The interconnections with the surrounding communities are to supply them with water; they cannot supply water to Lowell. A draft source water assessment (**SWAP**) was completed by the Massachusetts DEP. The (SWAP) report is available at the water utility for any parties interested. For more information, contact Operations Superintendent Steven Duchesne @ (978) 970-4242.

A susceptibility ranking of High was assigned to this system using the information collected during the assessment by the DEP. As with many water systems, this watershed contains potential sources of contamination. However, source protection measures reduce the risk of actual contamination. The Lowell Regional Water Utility was commended for taking an active role in protecting their drinking water source. Some examples of the staff's good work include the following:

Emergency Planning and Response – The Utility works with upstream communities in Massachusetts and New Hampshire on emergency response planning. The Utility has an emergency management committee and coordinates activities with the Massachusetts Emergency Management Agency (MEMA) facility in Tewksbury.

Communication with Other Communities – The Utility maintains contact with upstream communities, including those in New Hampshire, on a variety of source protection issues.

Unregulated Contaminants:

Our utility participated in a major drinking water quality-testing program in 1998 called the **Information Collection Rule (ICR)**. One of the contaminants we tested for is the parasite *Cryptosporidium* which has caused outbreaks of intestinal disease in the U.S. and overseas. *Cryptosporidium* is the only contaminant for which source water monitoring results must be reported. It is common in surface water, very hard to kill, and even a well-run water system will contain some live parasites. The U.S. Environmental Protection Agency (EPA) is working to resolve several scientific issues that will allow it to set *Cryptosporidium* safety standards. Our testing, performed quarterly in 1998 on the river water, revealed the presence of *Cryptosporidium*, but no precaution about our drinking water is currently needed for the general public, since **Cryptosporidium was not found in the finished treated drinking water that goes to your tap!**

Required Educational Information:

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. The presence of contaminants does not necessarily indicate that water poses a health risk. Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about potential health effects of their drinking water from their health care providers. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water that must provide the same protection for public health. Contact the EPA's Safe Drinking Water Hotline (800-426-4791) for more information about contaminants and potential health effects; and EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants.

Contaminants that may be present in source water include:

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

- (A) **Microbial contaminants**; such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- (B) **Inorganic contaminants**; such as salts and metals, can be naturally-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming.
- (C) **Pesticides and herbicides**; may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- (D) **Organic chemical contaminants**; include synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.
- (E) **Radioactive contaminants**; can be naturally occurring or be the result of oil and gas production and mining activities.

You can find us on the City of Lowell, MA Web page at: <http://www.lowellma.gov/depts/water/index.html>

And on the EPA Web page at: <http://yosemite1.epa.gov/ogwdw/ccr.nsf/america?openview&start=320>

Key To Table:

ppm = parts per million, or milligrams per liter (mg/l)
ppb = parts per billion, or micrograms per liter (µg/l)
pCi/l = picocuries per liter (a measure of radioactivity)
TT = Treatment Technique
AL = Action Level
N/A = not applicable
MDL = method detection limit

MRDL = Maximum Residual Disinfectant Level
MRDLG = Maximum Residual Disinfectant Level Goal
MCL = Maximum Contaminant Level
MCLG = Maximum Contaminant Level Goal
NTU = Nephelometric Turbidity Units
N/D = Non-Detectable

One Part Per Million Is Equal To:

~ One ounce in 82,000 pounds ~
~ One minute in two years ~
~ One penny in \$10,000.00 ~
~ One inch in 16 miles ~

El informe contiene información importante sobre la calidad del agua en su comunidad. Tradúzcalo o hable con alguien que lo entienda bien.

Le rapport contient des informations concernant la qualité de l'eau de votre communauté. Faites-le traduire, ou parlez-en à un ami qui le comprend bien.

O relatório contém informações importantes sobre a qualidade da água da comunidade. Traduza-o ou peça ajuda de uma pessoa amiga para ajudá-lo a entender melhor.

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“ *There’s a lot to like about Lowell* ” (2005 Water Quality Report)